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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,951	10/28/2003	Rathindra DasGupta	87324.1602	3663
7590	04/22/2004		EXAMINER	
Baker & Hostetler LLP Washington Square, Suite 1100 1050 Connecticut Avenue, N.W. Washington, DC 20036			MORILLO, JANELL COMBS	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/693,951	DASGUPTA, RATHINDRA
	<b>Examiner</b>	<b>Art Unit</b>
	Janelle Combs-Morillo	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 April 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 36-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 36-56 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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## **DETAILED ACTION**

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). There are 2 claims numbered 47.

Misnumbered claim 47 (the second #47) has been referenced in this office action as claim 56. The examiner requests applicant file a corrected version of the instant claims, with the second #47 renumbered as claim 56. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 36-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The instant case is a continuation of 10/100,053, in which the examiner could not find (literal) support for “0.01 to 0.15 percent one or more other elements”, substantially as stated in claim 36 line 13. The parent case 10/100,053, as well as the instant specification mentions “others 0-0.15” (see Table on page 10, etc.), but does not appear to mention a lower limit of 0.01. Claims dependent on the above rejected claims are likewise rejected under this statute. Appropriate correction is required.

***Claim Interpretation***

4. Independent claim 36 line 13 mentions “one or more other elements”. The examiner has interpreted said phrase to mean any other element besides the ones listed (Si, Fe, Mn, Mg, Zn, Ti, Cu) can be present in the range 0.01 to 0.15% (as opposed to interpreting this to mean all other elements must be limited to 0.01 to 0.15% each). If this interpretation is not what applicant intended, please clarify.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 36-52, 54, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loue et al (US 5,879,478).

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Loue teaches thixoforming an aluminum alloy comprising: 5-7.2% Si, 1-5% Cu, <1% Mg, <3% Zn, <1.5% Fe, up to 0.2% Ti, up to 0.1% B, other elements <1% each and <3% total (abstract), by casting said alloy into billets with a globular solidification structure (column 1 lines 7-13), reheating to the semisolid state, and forming by forging or pressure injection (column 4 lines 45-51). Loue teaches that the initial casting into billets with a globular solidification structure commonly includes mechanical agitation in order to produce the necessary non-dendritic structure (column 1 lines 25-28), and after the billets are cast, the billets can be cut into the given size blank needed (column 1 lines 33-34). The examiner points out that Ti and B are grain refiners.

Because Loue teaches that an overlapping alloy can be heated to the semi-solid state and pressure injected to produce a semi-solid product with a substantially overlapping alloy composition, it is held that Loue has created a prima facie case of obviousness of the presently claimed invention.

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range (instant claims 36-39, 51), including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

Concerning claims 40-42, 44-48, and 56, because Loue teaches substantially the same process performed on a substantially overlapping alloy composition, it is held that substantially the same results, including microstructural characteristics, are expected to occur. The examiner asserts that where the claimed and prior art products are identical or substantially identical in

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structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Concerning claim 43, which mentions the limitation "ascertaining the microstructure of the semi-solid metal before injecting the metal", though Loue does not specify that the semi-solid metal is necessarily ascertained at this step, it is held to be within the disclosure of Loue to determine that a semi solid structure has sucessfully been achieved at this point. Therefore it is also held to be within the disclosure of Loue to "ascertain" said semi solid metal at this point.

Concerning claims 49, 50, and 52, as stated above, Loue teaches the presently claimed processing conditions.

#### ***Allowable Subject Matter***

7. Claims 53-55 are allowable over the prior art of record, however said claims are rejected over 112 first paragraph as stated above. The prior art does not teach or suggest the presently claimed process of semi-solid forming the instant Al-Si-Cu-Fe-Mn-Mg-Zn-Ti alloy complete with Cr and/or Pb.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

*Jcm*  
jcm  
April 15, 2004